Claims

1. Printing cylinder supporting unit for a printing machine, comprising a supporting frame (27) and supporting means mounted on the supporting frame (27) for rotatably supporting one of a number of printing cylinders (1), which are designed so that in the operating state they make contact with a substrate (3) that is to be printed along a contact line (6) coinciding with a describing line of the printing cylinder (1), in which unit the printing cylinders (1) can have different diameters and the supporting means for each axial end of a printing cylinder (1) comprise at least three supporting bearings (11, 12, 13), each of which is designed to interact at the position of a bearing point with the bearing surface (5) of a bearing ring fixed concentrically on the end concerned of the printing cylinder (1),

characterized in that the bearing points for an axial end of the printing cylinder (1) lie on a common circle with variable diameter;

in that the printing cylinder supporting unit comprises movement means (21.1, 22.1, 23.1) for moving the supporting bearings (11, 12, 13) in such a way that the bearing points move along movement lines (21, 22, 23) that have a fixed position relative to the supporting frame (27), the movement lines intersecting each other at a reference point (25) that is fixed relative to the supporting frame (27), which reference point lies on the same common circle and in the operating state lies in a plane that is defined by the contact line (6) and the centre point of the common circle; and

in that the printing cylinder supporting unit comprises connecting means (40, 42, 43) for connecting the movements of the bearing points along their respective movement line.

2. Printing cylinder supporting unit according to claim 1, in which the movement lines (21, 22, 23) are straight lines

and the connecting means (40, 42, 43) connect the movements of the bearing points along their respective movement line in accordance with a fixed ratio.

3. Printing cylinder supporting unit according to claim 2, in which the movements of the supporting bearings (11, 12, 13) are interconnected by means of straight connecting rods (42, 43), which are all rigidly connected to each other at the position of a first supporting bearing, and which are each connected in a sliding manner to a separate subsequent supporting bearing.

4. Printing cylinder supporting unit according to claim 2 or 3, in which the supporting bearings (11, 12, 13) are each movable along a straight supporting bearing guide.

5. Printing cylinder supporting unit according to claim 4, in which the supporting bearing guide comprises a groove (21.1, 22.1, 23.1) in the supporting frame (27), in which a connecting piece is accommodated in a sliding manner, on which connecting piece the supporting bearings (11, 12, 13) are fixed.

6. Printing cylinder supporting unit according to one of the claims 2-5, which comprises three supporting bearings (11, 12, 13) for each axial end of a printing cylinder (1), in which for each axial end the straight movement line along which a bearing point of a first supporting bearing is moved lies substantially in the plane that is defined by the contact line (6) and the centre point of the common circle, and in which the straight movement lines along which the bearing points of a second and third supporting bearing are moved are mirrored relative to said plane and form an angle of substantially 60° relative to said plane.

7. Printing cylinder supporting unit according to one of the preceding claims, in which the supporting bearings (11,

12, 13) are in the form of rollers (11.1, 12.1, 13.1), which can roll over the bearing surface (5) of the bearing ring.

8. Use of a printing cylinder supporting unit according to one of the preceding claims in a printing machine.

9. Printing machine provided with a printing cylinder supporting unit according to one of claims 1 - 7.